- An allele is a stretch of DNA that encodes a gene.
- Allele A. double stranded DNA molecule and along the sequence three E'S are present. Sequence of E is GAATTC.
- Allele a. More or less identical except the second sequence is missing on the stretch of DNA. Sequence is missing and is different at that particular location.
- Restriction enzymes cut DNA at specific sequences —> [Bacterial Defence]. This cutting of sequences liberates fragments.
- On extraction of DNA from various individuals; Visualize and detect these fragments with the use of a probe that contains the DNA double stranded sequence which is homologous to the fragment that was cut up on having information on the gene. Don't need the whole gene, just need different fragments that can distinguish between genes. The fragments needed to be detected has to be homologous to the probe.
- Run gel electrophoresis on an agarose gel. Load individual samples and run the gel. Separates DNA by size of the DNA.
- A heterozygote will have an additive pattern of bands of both homozygous alleles.
- Can see the bands of stained with ethidium bromide. DNA will fluorescence as an orangish red colour. Once the gel is run want to apply a probe to detect gene of interest but first transfer DNA to a nylon membrane which is the exact image of the gel. At the same time when you do this transfer process you make the DNA single stranded by changing the pH of the gel. Then take the probe [stretch of DNA which is homologous to the strand of DNA interested in]. Make it single stranded and radioactively label it and take the membrane and put the probe [high concentration and radioactive] and bathe the membrane with the probe and make the condition such that the hydrogen bonding of complementary sequences will occur to the appropriate bands on the nylon membrane. Put an X-ray film on it. These membranes are emitting rays and can then see bands.
- See different banding patterns —> Size of DNA is known.
- May get darker bands which consist of repetitive sequences of the same size.